XLIII. *Part of a Letter from* W. Watſon, *M. D. F. R. S. to* John Huxham, *M. D. F. R. S. at* Plymouth, *giving ſome Account of the late Cold Weather. Dated* London, 14 February, 1767.

Dear Sir,

Read Nov. 19, 1767. THIS waits upon you to inform you of the degree of cold we have lately experienced. After as mild a winter as has been known here for many years, the froſt has been intenſe. Until the latter end of December, many of the tender annual exotic plants continued alive; ſuch as the African Marygold, Naſturtium Indicum, and others of this claſs. I ſaw even the plant, uſually called Balm of Gilead, at that time flouriſhing without ſhelter. Mr. Miller of Chelſea, with whom I talked upon this ſubject, informed me, that he had known the like but twice in his life; and that was in the years 1717 and 1722. However, at the beginning of laſt month, January, after ſome ſmart guſts of wind at Eaſt, it began to freeze; and continued increaſing, until the fifth of that month, in the morning, my thermometer, an excellent one made by Mr. Bird, ſtood in the open air ſomewhat under 20″, in the evening it was 29″. It continued thereabouts to the ninth, when in the morning it ſtood at 20″ again, and at night at 21″. On the tenth in the morning it ſtood at 17″, at night at 18″. From this time to the eighteenth it was never below 23″, but

frequently above the freezing point. On the eighteenth at night it ſtood at 19″ and ½. On the nineteenth at ſix in the morning it ſtood at 16″, at eight in the morning 15″ ½, at eleven at night 17″. On the twentieth at eight in the morning it ſtood at 18,″ at eleven at night 22″. On the next day, January twenty-firſt, the froſt broke; the thermometer at four in the afternoon ſtanding at 36″.

In the country it has been obſerved much colder. On January tenth, at Cardington in Bedfordſhire, Mr. Howard, Fellow of the Royal Society, by two thermometers, obſerved the mercury, at ſix in the evening, to ſtand at 9″. And upon the ſame day the Rev. Mr. Wollaſton, at Eaſt Dereham in Norfolk, found it ſo low as 8″. Mr. Ellinet, at Norwich, on the nineteenth of January, found his thermometer, at eight o'clock in the morning, to ſtand at 7″; at noon at 22″; at five in the afternoon 18″; at ten at night at 8″. Seven degrees therefore is the loweſt point, at which I have heard the thermometer has ſtood any where in England during the late froſt.

January tenth was the coldeſt day at Plymouth, where Dr. Farr, a very ingenious phyſician, and Mr. Mudge, who has communicated ſeveral papers to the Royal Society, each obſerved his thermometer to ſtand at 23″ and ¼.

The ſevere froſt of 1739, of which no account appears in the Philoſophical Tranſactions, began December twenty-ninth, when Lord Charles Cavendiſh's thermometer in his room ſtood at 25″; the next evening 21″.

From this time his Lordſhip placed his inſtrument out of the window, and at ſome diſtance from it; when

in the evening of December thirtieth, it ſtood at 17″. On the morning of January fifth, it ſtood at 13″. On the eighth at 15″. The ninth at 14″. Twenty-ſecond at 19″. Twenty-fifth at 17″. On February fifth at 21″. During all this time, the thermometer was ſeldom above 32″, the freezing point.

Thirteen degrees, therefore, during this froſt, was the loweſt obſervation, by Lord Charles Cavendiſh in Marlborough Street.

I am,

with all poſſible reſpect,

Dear Sir,

your moſt obliged,

and obedient Servant,

W. Watſon.

Abſtract from a Meteorological Diary kept at Plymouth.

This contains Obſervations twice a Day; the Barometer and Thermometer are made by Siſſon, the Rain Machines alſo, and ſimilar to that deſcribed in the Edinburgh Medical Eſſays.

N. B. One of the Thermometers is kept in a Parlour where there is no Fire, the other without Doors in the Rain Machine, which is never affected by the Sun, but was not examined before or after the Sun ſet; ſo that the loweſt State of the Thermometer in theſe Parts is not aſcertained.

JANUARY 1767.

Day		Bar.	Ther. within doors.	Ther. without doors.	Wind.		Rain	Weather.
1	9 a. m.	30 20	44		N.	2		Clear
	11 p. m.	29 84	45		E. b. N.	3		D° a remark. guſt of wind for ſome h. in the n.
2	9 a. m.	29 82	42	32	N. E.	2'''		Clear
	11 p. m.	29 65	40		N. E.	2'''		D° with froſt this night and the laſt
3	9 a. m.	29 66	40	30	N. N. E.	2'''		Fair; a few flakes of ſnow fell thro' the day
	11 p. m.	29 77	39		N. E.	2		Clear
4	9 a. m.	29 88	38	30	E.	2'		D° a very ſharp air
	11 p. m.	29 96	35		E.	2		D°
5	9 a. m.	29 95	33		N. E.	2		D°
	11 p. m.	29 91	35		N. W.	2		D°
6	9 a. m.	29 75	35		N. N. W.	2		D°
	11 p. m.	29 74	38	33	N. W.	2		Cloudy; little or no froſt
7	9 a. m.	29 64	39		E. b. N.	0		Hazy
	11 p. m.	29 56	39		S. W.	1	.230	Rain, heavy; but towards morn. ſevere froſt
8	9 a. m.	29 61	36		E. b. N.	2		Froſt; clear with a very ſharp air
	11 p. m.	29 70	35		N. E.	2		Heavy falls of ſnow
9	9 a. m.	29 70	35		N.	1		Slight falls of ſnow at times
	11 p. m.	29 72	35		N. W.	2		Clear and ſharp air
10	9 a. m.	29 60	34	23 5	N. W.	2		D°
	11 p. m.	29 46	34		S. W.	2'''		Cloudy; and towards morning rain

Jan. Day		Bar.	Ther. within doors.	Ther. without doors.	Wind		Rain	Weather
11	9 a. m.	29 22	33	24	N.	1	.110	Hail; ſleet; and after, moſt heavy fall of ſnow
	11 p. m.	29 20	33		N.	1		Cloudy; ſnow in 3 h. cov. upw. 6 inch. deep
12	9 a. m.	29 17	32	24	N. W.	1		Clear wind with the ſun; a very fine day
	11 p. m.	29 15	35		S. W.	2		Cloudy. N. B. Thermometer at noon 24
13	9 a. m.	28 93	37		S. S. E.	2'''		Cloudy; ſnow every where melt. by the thaw
	11 p. m.	28 67	39		S. E.	3		Rain heavy through the night; ſtormy
14	9 a. m.	28 67	40		S.	2	.960	Heavy rain in the morn. ſhowery thro' the day
	11 p. m.	28 90	42		S.	2		Showery
15	9 a. m.	29 30	44		S. S. E.	2''		Cloudy, with ſun-ſhine at times
	11 p. m.	29 36	45		S. S. E.	2'''		Cloudy
16	9 a. m.	29 42	44		S. S. E.	2'''	.320	Showery
	11 p. m.	29 55	44		E.	2		Cloudy
17	9 a. m.	29 70	40		N. E.	2		Cloudy; with a ſharp cold air
	11 p. m.	29 80	44		E. b. N.	2		D°
18	9 a. m.	29 82	36		N. E.	2		Fair; air very ſharp
	11 p. m.	29 90	35		N. E.	2		Clear and froſt
19	9 a. m.	29 90	35		N. N. W.	1	.070	Clear till 4 p. m. then ſhowery
	11 p. m.	29 92	38		N.	0		Clear and froſt
20	9 a. m.	30 0	36	27	N.	0		D°
	11 p. m.	30 8	38	34	W.	1		Cloudy; thaw; towards morning rain

Depth

Depth of Rain which has fallen at Plymouth during the Year 1766.

1766	Dec. Inc.	Parts	Barom. hig.	ſtate	Barom. low.	ſtate
January	0	.165	30	74	29	83
February	2	.590	30	65	29	40
March	1	.690	30	45	28	83
April	3	.780	30	43	29	26
May	2	.600	30	23	29	21
June	3	.880	30	21	29	33
July	3	.550	30	3	29	56
Auguſt	1	.600	30	10	29	44
September	2	.630	30	20	29	45
October	2	.650	30	45	29	08
November	4	.660	30	50	28	62
December	3	.280	30	44	29	14
Inches	35	.075				

N. B. In the latter end of December 1766, the weather was ſo mild, and had been ſo in the preceding weeks, that ripe ſtrawberries were gathered in my garden at the Royal Hoſpital.

Meteorological Regiſter, kept at the Royal Hoſpital near Plymouth, continued from January 20, to March 1, 1767.

Day Jan.		Bar.	Thr.	Wind	Rain	Weather	Remarks
21	9 a. m.	29 97	39	W. b. S. 2		Slight ſhowers	
	11 p. m.	29 92	40	W. b. S. 1		Cloudy	
22	9 a. m.	29 67	42	W. b. S. 2″		Small rain conſtant thro' the day	
	11 p. m.	29 74	44	N. W. 2		Cloudy	
23	9 a. m.	29 94	44	N. 2		Showery, but clear for the moſt part	
	11 p. m.	29 0	45	N. 2		Cloudy weather	
24	9 a. m.	29 90	46	S. W. 2		Small rain through the day	Higheſt ſtate of Barom. 30 5
	11 p. m.	29 81	48	S. W. 2′	.310	D°	Loweſt ſtate of Barom. 29 4
25	9 a. m.	29 72	49	S. W. 2‴		Cloudy, with ſmall rain at times	
	11 p. m.	29 65	49	S. W. 2‴		D°	
26	9 a. m.	29 62	49	S. W. 2‴		Showers in the forenoon, afterw. clear	Higheſt ſtate of Therm. 53
	11 p. m.	29 68	49	W. b. S. 2	.148	Cloudy	Loweſt ſtate of Therm. 39
27	9 a. m.	29 50	50	S. 3		Rain heavy and conſtant thro' the day	
	11 p. m.	29 58	50	S. S. E. 2″		D°	
28	9 a. m.	29 67	50	N. N. E. 2	.960	Small rain through the day	The quantity of rain is very conſiderable during this period; and yet, on looking back into the regiſter, I find that in the month of March 1765, Inc. the total is 10.820 and taking in from the 23d of February, to the 2d of April 1765, viz. 39 days, Inc. the amount is 13.900
	11 p. m.	29 50	49.5	N. E. 1		Rain	
29	9 a. m.	29 77	46	S. S. E. 2	.572	Rain from noon till 4 p. m.	
	11 p. m.	29 77	48	S. S. E. 2		Cloudy	
30	9 a. m.	29 73	50	S. W. 2		Fair till 11 a. m.	
	11 p. m.	29 72	51	S. W. 2	.530	Rain conſtant ſince 11 a. m.	
31	9 a. m.	29 73	52	S. S. W. 2		Rain conſtant, with hazy weather	
	11 p. m.	29 78	53	S. 2	.420	Small rain	
Feb.							
1	9 a. m.	29 90	52	S. S. E. 1		Fog, with ſmall r. aft. heavy thro' day	A quantity equal, I ſuppoſe, to what uſually falls in the months, in moſt parts of England, being nearly fourteen inches.
	11 p. m.	29 74	53	S. S. W. 2		Cloudy	
2	9 a. m.	29 09	52	S. E. 1		Hazy weather, with rain at times	
	11 p. m.	29 91	53	S. E. 1	.240	D°	
3	9 a. m.	29 83	51	S. E. 2		Fair, with ſun-ſhine thro' the day	
	11 p. m.	29 72	52	E. 1		Clear	
4	9 a. m.	29 60	51	E. 2		Fair through the day	
	11 p. m.	29 56	49	E. b. S. 2		Clear	
5	9 a. m.	29 54	51	E. 2		D°	
	11 p. m.	29 59	50	E. 2′		Cloudy	
6	9 a. m.	29 60	48	E. b. S. 2		Small rain, with hazy weather	
	11 p. m.	29 41	51	E. 2″		Rain	
7	9 a. m.	29 23	51	E. 2	.340	Hazy, with ſhowers	
	11 p m	29 15	51	S. 2		Heavy ſhowers, with ſqualls.	

Day Feb.		Bar.	Thr.	Wind		Rain	Weather	Remarks
8	9 a. m.	29	15	51	S. W. 2″	.600	Hazy ſhowers through the day	
	11 p. m.	29	13	50.5	S. W. 2		Cloudy	
9	9 a. m.	29	32	51	E. 1		Hazy weather, with rain till 1 p. m.	
	11 p. m.	29	37	51	S. W. 2		Cloudy, but afternoon fair	
10	9 a. m.	29	17	51	S. W. 2″		Thunder ſhowers heavy, with ſqualls	
	11 p. m.	29	48	51	W. b. W. 2		Showery	
11	9 a. m.	29	23	51	S. E. 2	.770	Rain conſt. from 11 a. m. thro' the d.	
	11 p. m.	29	20	51	S. S. W. 3		Rain, with very heavy ſqualls	
12	9 a. m.	29	35	50	N. 2		Slight ſhowers, with ſun-ſhine between	
	11 p. m.	29	52	49	N. 1		Clear and ſerene	
13	9 a. m.	29	22	49	S. E. 2‴		Rain conſtant; hazy, w. var. to S.W.	
	11 p. m.	29	17	50	W. 2‴	.990	Heavy ſhowers	
14	9 a. m.	29	34	50	W. 2″		Hail ſtorms, with heavy ſhowers	
	11 p. m.	29	50	51	S. W. 2		Cloudy	
15	9 a. m.	29	54	51	S. 2	.670	Rain very heavy till the afternoon	N. B. The machine is placed free of eddy winds, at a very conſiderable diſtance from any building, except to the North, where, however, it is ſixty feet diſtant, and from that quarter we have little or no rain.
	11 p m.	29	57	51	W. b. S. 2		Clear	
16	9 a. m.	29	53	50	S. S. W. 2′		Cloudy, with ſmall rain at times	
	11 p. m.	29	63	50	S. W. 2		Cloudy weather	
17	9 a. m.	29	28	51	S. 2	.450	Rain conſtant till 2 p. m.	
	11 p. m.	29	32	50	S. W. 2		Showery	
18	9 a. m.	29	38	51	S. W. 2		Rain till noon	
	11 p. m.	29	67	51	S. W. 2	.420	Showery; but clear for the moſt part	
19	9 a. m.	29	67	51	S. W. 2″		Clear	
	11 p. m.	29	68	51	S. S. W. 3		Rain in the night very heavy	
20	9 a. m.	29	26	51	S. E. 2‴	.710	Rain conſtant through the day	
	11 p. m.	29	4	51	S. W. 3		Hail-ſt. with moſt heavy ſqualls of w.	
21	9 a. m.	29	32	51	S. E. 2	.300	Fair, with ſun-ſhine	
	11 p. m.	29	14	49	S. 2		Rain ſince 5 p. m.	
22	9 a. m.	29	43	48	W. b. N. 2		Fair	
	11 p. m.	29	65	48	W. 2		Showers in the even. at preſent clear	
23	9 a. m.	29	80	48	S. 1		Clear	
	11 p. m.	29	87	49	W. b. N. 2	.716	Cloudy; in the night, heavy rain	
24	9 a. m.	29	86	50	W. 2′		Rain drizling through the forenoon	
	11 p. m.	36	5	50	W. b. N. 2		Cloudy	
25	9 a. m.	29	74	51	S. W. 2″	.510	Rain conſtant till 3 p. m.	
	11 p. m.	29	70	51	W. 2		Showery	
26	9 a. m.	29	51	51	S. W. 2‴		Rain drizling conſtant through the day	
	11 p. m.	29	44	51	S. W. 3		Rain; wind at S. W. a ſtorm	
27	9 a. m.	29	5[illegible]	52	N. W. 2″		Black and cloudy weather; but little r.	
	11 p. m.	29	56	51	N. W. 2″		D°	
28	9 a. m	29	6	49	N. N. W. 2″	.284	Showers in the morn. afterw. Hail-ſt.	
	11 p. m.	29	90	49	N. N. W. 2″		Show. at times; but fair for the moſt part	
					Total 94	.940	or near 10 inches of rain in 39 days	